NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

BOARD MEETING

CITY OF KRUM
CITY COUNCIL CHAMBERS
146 W. MCCART ST.
KRUM, TX 76249

TUESDAY
MARCH 11, 2014
9:30 AM

NOTICE OF PUBLIC MEETING

OF THE
BOARD OF DIRECTORS of the

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT
at the

City of Krum
City Council Chambers
146 W. McCart St
Krum, TX 76249
Tuesday, March 11, 2014 at 9:30 a.m.

Board Meeting

Notice is hereby given that the Board of Directors of the North Texas Groundwater Conservation District ("District") may discuss, consider, and take all necessary action, including expenditure of funds, regarding each of the agenda items below:

Agenda:

1. Pledge of Allegiance and Invocation.

2. Call to order, establish quorum; declare meeting open to the public.

3. Approval of minutes from the January 14, 2014, board meeting.

4. Consider and act upon approval of invoices and reimbursements.

5. Receive reports from the following Committees*:
   a. Budget and Finance Committee
      1) Receive Monthly Financial Information
      2) Consider and act upon confirming execution of engagement letter for audit services for fiscal year ending December 31, 2013
   b. Investment Committee
   c. Rules and Bylaws Committee
   d. Groundwater Monitoring and Database Committee
   e. Policy and Personnel Committee
   f. Conservation and Public Awareness Committee
   g. Management Plan Committee
      1) Receive quarterly report
      2) Receive annual report

6. Consider and act upon proposal from Dr. Zac Hildenbrand for the UT-Arlington Barnett Shale study.

7. Update and possible action on the Northern Trinity/Woodbine Aquifer GAM Overhaul Project and the development of proposed Desired Future Conditions (DFCs).

8. Update and possible action regarding the process for the development of Desired Future Conditions (DFCs) including the consideration and possible approval of consulting services.

9. Consider and act upon request to waive registration fees.

10. Consider and act upon request for clarification of Temporary Rules regarding domestic use exemption.

11. Consider and act upon compliance and enforcement activities for violations of District Rules.

12. General Counsel's Report:
    a. Update and possible action on the status of groundwater-related case law, including Texas Supreme Court review of *Edwards Aquifer Authority v. Bragg* case.
    b. Update on groundwater legislative activities.
    c. Other legal matters.

13. General Manager's Report: The General Manager will update the board on operational, educational and other activities of the District.

14. Public comment.

15. Open forum / discussion of new business for future meeting agendas.

16. Adjourn public meeting.

* Reports from District standing committees will include a briefing by each committee for the Board on the activities of the committee, if any, since the last regular Board meeting.

The above agenda schedules represent an estimate of the order for the indicated items and is subject to change at any time.

These public meetings are available to all persons regardless of disability. If you require special assistance to attend the meeting, please call (855) 426-4433 at least 24 hours in advance of the meeting to coordinate any special physical access arrangements.

At any time during the meeting or work session and in compliance with the Texas Open Meetings Act, Chapter 551, Government Code, Vernon's Texas Codes, Annotated, the North Texas Groundwater Conservation District Board may meet in executive session on any of the above agenda items or other lawful items for consultation concerning attorney-client matters (§551.071); deliberation regarding real property (§551.072); deliberation regarding prospective gifts (§551.073); personnel matters (§551.074); and deliberation regarding security devices (§551.076). Any subject discussed in executive session may be subject to action during an open meeting.

ATTACHMENT 3

MINUTES OF THE BOARD OF DIRECTORS' PUBLIC MEETING
NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

TUESDAY, JANUARY 14, 2014

CITY OF KRUM
CITY COUNCIL CHAMBERS
146 W. MCCART ST
KRUM, TX 76249

Members Present:	Thomas Smith, Philip Sanders, Ronny Young, Chris Boyd, Dan Collins, Eddy Daniel, Evan Groeschel, Kenny Klement, Ron Sellman
Members Absent:	None
Staff:	Jerry Chapman, Drew Satterwhite and Carmen Catterson
Visitors:	Bob Fazen, Citizen Zacariah Hildenbrand, Inform Environmental & UT Arlington Keith King, The Weekly News of Cooke County Barry McDonald, Citizen Shawn McGlothlin, Texas Instruments Mark McPherson, McPherson Law Firm Neal Welch, City of Sanger

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1. Pledge of Allegiance and Invocation

President Smith led the Pledge of Allegiance and Secretary/Treasurer Young led the invocation.

2. Call to order, establish quorum; declare meeting open to the public

President Smith called the public meeting to order at 9:36 AM. All Board members were present except Board Member Daniel and Vice President Sanders.

Vice President Sanders arrived at 9:37 AM.

3. Approval of Minutes from the November 12, 2013, public hearing and board meeting

Young motioned to approve the Minutes from the November 12, 2013 board meeting. The motion was seconded by Sellman and passed unanimously with Board Members Boyd and Groeschel abstaining and with Board Member Daniel absent.

Board Member Daniel arrived at 9:38 AM.

4. Public Comment

Bob Fazen addressed the Board and thanked them for providing the agendas to the public each month. He thanked the Board for including consideration of the UT Arlington groundwater study on the agenda for consideration. He expressed his belief that the study could provide additional information that would show that the oil and gas fracking are affecting groundwater quality. He also stated that he understood that the study could show that the groundwater is not affected. Mr. Fazen provided his support in the project and stated that the groundwater production fee might need to be raised to support the project, but it would be a worthwhile increase.

5. Consider and act upon approval of invoices and reimbursements.

Mr. Chapman provided information about the invoices, which are all routine. Board Member Groeschel inquired about the Lloyd Gosselink invoice and the services provided. The Board requested the staff email the Lloyd Gosselink invoice to the Board for review and possible discussion at the next meeting.

Board Member Daniel motioned to approve the invoices as presented for a total cost of $55,889.08. The motion was seconded by Board Member Boyd and passed unanimously.

6. a. Budget and Finance Committee

1) Receive Monthly Financial Information

Mr. Satterwhite reviewed the monthly financial information. He explained that the report does not include the fourth quarter billing. The loan balance due will be reduced when the audit is complete to reflect the $45,000 paid in September 2013. The expenses are approximately 5% below budget. The final revenue will be reflected in the audit. Board Member Boyd asked if there were any entities that had never paid. Mr. Chapman responded that there are no remaining entities that have never provided payment to the District. But there are nine entities that have not paid for the third quarter.

b. Investment Committee

No report received

c. Rules and Bylaws Committee

No report received

d. Groundwater Monitoring and Database Committee

No report received

e. Policy and Personnel Committee

No report received

f. Conservation and Public Awareness Committee

No report received

g. Management Plan Committee

No report received

7. Update and possible action on the Northern Trinity/Woodbine Aquifer GAM Overhaul Project and the development of proposed Desired Future Conditions (DFCs)

Board Member Daniel explained that the project is moving forward nicely on target. The GAM is now ready to be used for test runs. The Groundwater Management Area 8 (GMA 8) meeting will be held on January 21st. At that meeting, the committee plans to announce that the GAM will be used to run scenarios. The consultants plan to announce that the model is now ready to be used and will request information from the other groundwater conservation districts to see how the DFCs look across GMA 8. The completion of the GAM should coincide nicely with the new DFC process. Each groundwater district will adopt a DFC and then the GMA 8 must approve the DFCs before they are sent to the Texas Water Development Board (TWDB). The new Modeled Available Groundwater (MAG) information will be incorporated into the new regional water plan, which will then be incorporated into the new State Water Plan.

Board Member Klement commented on the state of aquifers around the country. He also discussed the Environmental Protection Agency's (EPA's) efforts to control groundwater nationally. He expressed a belief that if an area was determined to be in dire need of water, the EPA could issue requirements for water to be pumped to that area from a different state.

8. Update and possible action regarding the process for the development of Desired Future Conditions (DFCs) including the consideration and possible approval of consulting services

With the DFC process beginning, the Board has discussed hiring a representative for the District. Board Member Daniel has discussed hiring Mr. James Beech with LBG Guyton to represent the District in the DFC process. The first choice would have been INTERA, but they are already engaged by the Upper Trinity GCD. The second choice was LBG Guyton, who is currently working with the Clearwater UWCD and Prairielands GCD, but because of the geographic location of each district, there is no conflict. The contract with LBG Guyton would be funded by the North Texas GCD. If the DFCs are not backed up with good science, they will not be defensible.

Board Member Klement asked why the Upper Trinity GCD would be a conflict for INTERA. Board Member Daniel explained that because water generally flows from west to east, a conflict could be experienced. The Board discussed the benefits of hiring LBG Guyton. Board Member Collins stated that the first choice would have been INTERA, but the second choice was LBG Guyton.

Vice President Sanders motioned to authorize the president to execute the agreement with LBG Guyton subject to review by the District's legal counsel and to authorize the president to negotiate a longer contract for the entire project length. The motion was seconded by Board Member Klement and passed unanimously with President Smith abstaining. President Smith commented that his firm has been hired to consult on a project in South Texas and he felt that his vote would be a conflict of interest.

Board Member Daniel commented that Mr. Bill Mullican has provided a proposal to represent GMA 8 to help with the DFC process. The contract would be paid for by all the districts in GMA 8. Mr. Mullican is the current contract manager for the GAM update and is very familiar with the project. The Board agreed unanimously that a contract manager for the DFC process was necessary.

9. Consider and take action regarding hiring and/or terminating legal counsel

Mr. Satterwhite explained that this item was tabled at the November meeting pending a contract from Sledge Fancher, PLLC. In October, Brian Sledge alerted the District that he was leaving Lloyd Gosselink and starting a new firm. The same day a call was received from Lloyd Gosselink requesting the District to stay with their firm. A contract has been received from Mr. Sledge with the same rate for all principles and only a $5 per hour increase for the paralegal.

Board Member Daniel commented that Ty Embry from Lloyd Gosselink called him and assured that Lloyd Gosselink has retained groundwater staff. Board Member Groeschel expressed that staying with Mr. Sledge and his team are familiar with the District. Mr. Satterwhite explained that the Red River GCD Board

Board Member Collins motioned to terminate the contract with Lloyd Gosselink Firm and to authorize the president to execute the contract with Sledge Fancher, PLLC pending legal review. The motion was seconded by Vice President Sanders. Board Member Boyd stated that he did not feel highly opinionated either way, but Lloyd Gosselink is a long-time well respected firm in Austin. He expressed concern in terminating a contract with a well-established firm. Vice President Sanders commented that the firm is made of people with individual talents. He stated that he believes more with people than the name of the firm on the letterhead. He expressed confidence in Mr. Sledge and his team. Board Member Collins stated that he agreed with Board Member Boyd in the faith in the firm. But, the groundwater team at Lloyd Gosselink was composed primarily of Mr. Sledge and his team. The Board continued to discuss the merits of each firm. The motion passed unanimously.

10. Consider and discuss information from Dr. Zac Hildenbrand on the UT-Arlington Barnett Shale study

Mr. Chapman explained that he and Mr. Satterwhite were at a meeting where Dr. Hildenbrand provided a presentation on his work in the Barnett Shale performing groundwater testing. Dr. Hildenbrand has been researching contamination in the aquifer from hydraulic fracturing and injection wells. However, there was very little research on this subject initially. In 2011, he and his partner purchased testing equipment and performed 100 samples. In their

sampling, they learned that the closer to hydraulic fracturing sites, the higher levels of arsenic, selenium, barium and other contaminants. Dr. Hildenbrand explained that the new study is in coordination between UT Arlington and UT Austin. His team is studying the chemicals contained in the samples, while UT Austin will be studying the dissolved solids and metals. His team has been requested to expand the study area by several groundwater districts. They are up to 550 samples at this time. He explained that the study is also hoping to develop methods of decontaminating any groundwater that does have a contamination event.

Board Member Klement asked if water that has been used for fracking could be cleaned and used as drinking water. Dr. Hildenbrand explained that carbon filtering is available to clean water of salinity. There is one firm that is working toward a goal of offering filters for free, but they would own the rights to anything filtered out of the water, including precious metals. Dr. Hildenbrand explained that his study is based on the effects on the environment from unconventional drilling. When he first started the study in 2011, he needed 100 samples and expected the process of finding volunteers to take 6-8 weeks. However, he received 1500 inquiries in the first 24 hours.

Secretary/Treasurer Young asked how the 100 sites would be selected. Dr. Hildenbrand explained that all requests for sampling would be plotted on Google Earth and then used to collect samples from across the entire area. Vice President Sanders asked if the study could be subject to criticism and if it could be considered opinionated one way or another. Dr. Hildenbrand stated that he and his team have worked very hard to maintain neutrality. Board Member Boyd stated that the fracking formulas are very proprietary and secret. Without having baseline samples before the fracking began, how could the study show that the contamination was caused by the fracking? Dr. Hildenbrand explained that the study will use forensic science to determine contaminants in the water. Certain chemicals are industry specific, which can provide an assumption that the chemicals came from fracking activities. His study will not provide the assumptions, only the science.

Board Member Boyd asked if Dr. Hildenbrand would be willing to uphold his position in support of the science. Dr. Hildenbrand explained that he has received death threats if he continues the study. His life has been dedicated to the study for the past three years and he is completely dedicated to the seeing the project reach its conclusion.

The test sites would be chosen to provide some locations near hydraulic fracturing and injection wells and some a certain distance away to provide a combination of reports on the quality of the groundwater. The study will only explain the science and what they find. They hope to be able to determine the relationship between drilling and water quality, but a perfect correlation will be unlikely due to the way that aquifers are structured.

Board Member Boyd asked if the study was being sponsored by the university or Dr. Hildenbrand's private company. Dr. Hildenbrand explained that the study was collaboration. While he is a collaborative scientist for the university, they only pay for the sampling and not his salary. The contract would be with his private company and the funds would be disseminated to the university. Vice President Sanders asked how the District's participation would affect the study. Dr. Hildenbrand explained that the study would be beneficial in that it would expand the study parameters and area explored, in addition to providing the District with analysis of the

groundwater from more than 100 wells. The final deliverable is expected to be complete September 1, 2014.

The Board continued to discuss the study in order to obtain water quality data. Vice President Sanders stated that he was not interested in being associated with a movement that has a specific agenda and that contests the leadership in the State. Board Member Collins stated that he is interested in the water quality and what the District can do with the water quality to improve any potential problems. He expressed that the District is charged with determining the amount of water available, but also to determine the quality of the water and what might be possible to improve the quality of the water for future generations.

It was the consensus of the Board for Dr. Hildenbrand to provide a proposal for consideration at the February Board meeting.

11. Consider and act upon nominations for Places 1, 2 and 3 of the Board of Trustees of the TWCA Risk Management Fund

The time for nominations has passed, but the request for elections has been received. Mr. Chapman recommended the Board vote for the recommended nominees.

Secretary/Treasurer Young motioned to authorize the president to submit the ballot for the nominees. The motion was seconded by Board Member Boyd and passed unanimously.

12. General Manager's Report

The staff is working to separate the registered wells by county and use. The Board requested that the staff include a breakout of wells that have been completed in the previous month for both exempt and non-exempt.

A letter was received from the Cross Timbers WSC about a well they drilled in 2013. This will be included for action in February.

Audit proposals have been solicited and two have been received to date. The staff is expecting to receive two or three more. The proposals will be provided to the Board in February for action to be taken to engage a firm.

Mr. Chapman and Mr. Satterwhite are scheduled to attend a water meeting in Austin on January 23 and 24.

Mr. Chapman again emphasized the need to focus on the development of DFCs. Two entities have already expressed differing opinions on the state of the aquifer.

Mr. Chapman's retirement is currently scheduled for March 31st. President Smith thanked Mr. Chapman for his service.

13. Open Forum / discussion of new business for future meeting agendas

Board Member Collins asked the Board if, in addition to the proposal to fund Dr. Hildenbrand's study, to request additional information on developing a comprehensive water quality monitoring program including a cost breakdown. Dr. Hildenbrand agreed to provide the proposal for consideration at an upcoming meeting.

The next meeting will be held on February 11, 2014 at 9:30 AM at Krum City Hall.

12. Adjourn public meeting

The public meeting adjourned at 11:30 AM.

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Recording Secretary

Secretary-Treasurer

ATTACHMENT 5 A-2

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: March 4, 2014

SUBJECT: AGENDA ITEM NO. 5A-2

CONSIDER AND ACT UPON CONFIRMING EXECUTION OF ENGAGEMENT LETTER FOR AUDIT SERVICES FOR FISCAL YEAR ENDING DECEMBER 31, 2013

ISSUE

Consider and act upon confirming execution of engagement letter for audit services fiscal year ending December 31, 2013

BACKGROUND

The Board had previously instructed the staff to solicit proposal for audit services for the fiscal year ending December 31, 2013. The staff initiated invitations to several firms in North Central Texas. As a result of that solicitation, four proposals were received.

OPTIONS/ALTERNATIVES

Due to inclement weather in February, the Board meeting was cancelled. The timeline for selecting an auditing firm was very slim due to the audit needing to be completed by June 1st for budget preparation purposes. In light of these circumstances, President Smith appointed a committee composed of Board Members Boyd, Sanders and Young. The committee was requested to review the proposals received and select the firm they felt would best suit the District's needs.

CONSIDERATIONS

Of the four proposals received, the lowest cost proposal was submitted by McClanahan and Holmes, LLP of Bonham, Texas. The second lowest was submitted by Hankins Eastup Deaton Tonn & Seay of Denton, Texas. The committee reviewed the proposals and selected Hankins Eastump Deaton Tonn & Seay of Denton, Texas. An engagement letter was signed on February 17th and returned to the firm in order for the firm to begin scheduling the District's audit.

STAFF RECOMMENDATIONS

The staff recommends the Board confirm the committee's selection of the firm Hankins Eastup Deaton Tonn & Seay firm of Denton, Texas for the 2013 audit.

ATTACHMENTS

Engagement Letter

PREPARED AND SUBMITTED BY:

Debi Atkins, Finance Officer

MEMBERS:
AMERICAN INSTITUTE OF
CERTIFIED PUBLIC
ACCOUNTANTS
TEXAS SOCIETY OF CERTIFIED
PUBLIC ACCOUNTANTS

HANKINS, EASTUP, DEATON,
TONN & SEAY
A PROFESSIONAL CORPORATION
CERTIFIED PUBLIC ACCOUNTANTS

902 NORTH LOCUST
P.O. BOX 977
DENTON, TEXAS 76202-0977

TEL. (940) 387-8563
FAX (940) 383-4746

February 17, 2014

North Texas Groundwater Conservation District
5100 Airport Drive
Denison, Texas 75020

We are pleased to confirm our understanding of the services we propose to provide the North Texas Groundwater Conservation District (the "District") for the year ended December 31, 2013. We will audit the financial statements of the governmental activities and each major fund, which collectively comprise the basic financial statements of North Texas Groundwater Conservation District, as of and for the year ended December 31, 2013. Accounting standards generally accepted in the United States provide for certain required supplementary information (RSI), such as management's discussion and analysis (MD&A), to accompany the District's basic financial statements. As part of our engagement, we will apply certain limited procedures to the District's RSI. These limited procedures will consist principally of inquiries of management regarding the methods of measurement and presentation, which management is responsible for affirming to us in its representation letter. Unless we encounter problems with the presentation of the RSI or with procedures relating to it, we will disclaim an opinion on it. The following RSI is required by generally accepted accounting principles and will be subjected to certain limited procedures, but will not be audited:

1. Management's discussion and analysis.
2. Budgetary Comparison Schedule -General Fund.

Audit Objectives

The objective of our audit is the expression of an opinion about whether your basic financial statements are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit will be conducted in accordance with U.S. generally accepted auditing standards, and will include tests of accounting records, and other procedures we consider necessary to enable us to express such an opinion. If our opinion on the financial statements is other than unqualified, we will discuss the reasons with management in advance. If, for any reason, we are unable to complete the audit or are unable to form or have not formed an opinion, we may decline to express an opinion or to issue a report as a result of this engagement.

Management Responsibilities

Management is responsible for the basic financial statements and all accompanying information as well as all representations contained therein. You are responsible for making all management decisions and performing all management functions relating to the financial statements and related notes and for accepting full responsibility for such decisions. Further, you are required to designate an individual with suitable skill, knowledge, or experience to oversee any nonaudit services we provide and for evaluating the adequacy and results of those services and accepting responsibility for them.

Management is responsible for establishing and maintaining internal controls, including monitoring ongoing activities; for the selection and application of accounting principles; and for the fair presentation in the financial statements of the respective financial position of the governmental activities and each major fund and the respective changes in financial position in conformity with U.S. generally accepted accounting principles.

As part of the audit, we will prepare a draft of your financial statements and related notes. You will be required to review and approve those financial statements prior to their issuance and have responsibility to be in a position in fact and appearance to make an informed judgment on those financial statements. Further, you are required to designate a qualified management-level individual to be responsible and accountable for overseeing our services.

You are responsible for making all financial records and related information available to us. We understand that you will provide us with such information required for our audit and that you are responsible for the accuracy and completeness of that information. Your responsibilities include adjusting the financial statements to correct material misstatements and for confirming to us in the management representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements taken as a whole.

You are responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the District involving (a) management, (b) employees who have significant roles in internal control, and (c) others where the fraud could have a material effect on the financial statements. Your responsibilities include informing us of your knowledge of any allegations of fraud or suspected fraud affecting the District received in communications from employees, former employees, grantors, regulators, or others. In addition, you are responsible for identifying and ensuring the District complies with applicable laws and regulations and for taking timely and appropriate steps to remedy any fraud, illegal acts, or violations of contracts or grant agreements that we may report.

Management is responsible for establishment and maintenance of a process for tracking the status of audit findings and recommendations. This responsibility includes relaying to us corrective actions taken to address significant findings and recommendations resulting from those audits or other engagements or studies. You are also responsible for providing management's views on our current findings, conclusions, and recommendations, as well as your planned corrective actions, and the timing and format related thereto.

Audit Procedures – General

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit will involve judgment about the number of transactions to be examined and the areas to be tested. We will plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements, whether from errors, fraudulent financial reporting, misappropriation of assets, or violations of laws or governmental regulations that are attributable to the District or to acts by management or employees acting on behalf of the District.

Because an audit is designed to provide reasonable, but not absolute, assurance and because we will not perform a detailed examination of all transactions, there is a risk that material misstatements or noncompliance may exist and not be detected by us. In addition, an audit is not designed to detect immaterial misstatements or violations of laws or governmental regulations that do not have a direct and material effect on the financial statements. However, we will inform you of any material errors and any fraudulent financial reporting or misappropriation of assets that come to our attention. We will also inform you of any violations of laws or governmental regulations that come to our attention, unless clearly inconsequential. Our responsibility as auditors is limited to the period covered by our audit and does not extend to any later periods for which we are not engaged as auditors.

Our procedures will include tests of documentary evidence supporting the transactions recorded in the accounts and may include direct confirmation of receivables and certain other assets and liabilities by correspondence with selected funding sources, creditors, and financial institutions. We will also request written representations from the District's attorneys as part of the engagement, and they may bill the District for responding to this inquiry. At the conclusion of our audit, we will require certain written representations from management about the financial statements and related matters.

Audit Procedures – Internal Control

Our audit will include obtaining an understanding of internal control sufficient to plan the audit and to determine the nature, timing, and extent of audit procedures to be performed. An audit is not designed to provide assurance on internal control or to identify deficiencies in internal control. However, during the audit, we will communicate to you internal control related matters that are required to be communicated under professional standards.

Audit Administration, Fees and Other

We will provide copies of our reports to the District; however, it is management's responsibility to submit the reporting package to appropriate entities.

Carl Deaton is the engagement partner and is responsible for supervising the engagement and signing the report. We estimate that our fee for these services will be

$5,000 for the 2013 audit and $5,200 for the 2014 audit. The fee estimate is based on anticipated cooperation from your personnel and the assumption that unexpected circumstances will not be encountered during the audit. If significant additional time is necessary, we will discuss it with you and arrive at a new fee estimate before we incur the additional costs.

Government Auditing Standards require that we provide you with a copy of our most recent external peer review report and any letter of comment, and any subsequent peer review reports and letters of comment received during the period of the contract. Our 2012 peer review report accompanies this letter.

We appreciate the opportunity to submit this proposal and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you agree with the terms of this proposal as described in this letter, please sign a copy of this letter and return it to us.

Hankins, Eastup, Deaton, Tonn & Seay

Hankins, Eastup, Deaton, Tonn & Seay
A Professional Corporation
Certified Public Accountants

RESPONSE:

This letter correctly sets forth the understanding of the North Texas Groundwater Conservation District.

Signature: _____

Title: General Manager

VAIL & KNAUTH, LLP
CERTIFIED PUBLIC ACCOUNTANTS
AUDIT, TAX AND ADVISORY SERVICES

10300 N. Central Expressway, Suite 460
Dallas, TX 75231

main: 214 660 2000
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System Review Report

To the Partners of
Hankins, Eastup, Deaton, Tonn & Seay, P.C.
and the Peer Review Committee of the Texas Society of CPAs

We have reviewed the system of quality control for the accounting and auditing practice of Hankins, Eastup, Deaton, Tonn & Seay, P.C. (the firm) in effect for the year ended February 29, 2012. Our peer review was conducted in accordance with the Standards for Performing and Reporting on Peer Reviews established by the Peer Review Board of the American Institute of Certified Public Accountants. The firm is responsible for designing a system of quality control and complying with it to provide the firm with reasonable assurance of performing and reporting in conformity with applicable professional standards in all material respects. Our responsibility is to express an opinion on the design of the system of quality control and the firm's compliance therewith based on our review. The nature, objectives, scope, limitations of, and the procedures performed in a System Review are described in the standards at www.aicpa.org/prsummary.

As required by the standards, engagements selected for review included engagements performed under *Government Auditing Standards* and audits of employee benefit plans.

In our opinion, the system of quality control for the accounting and auditing practice of Hankins, Eastup, Deaton, Tonn & Seay, P.C.in effect for the year ended February 29, 2012, has been suitably designed and complied with to provide the firm with reasonable assurance of performing and reporting in conformity with applicable professional standards in all material respects. Firms can receive a rating of *pass*, *pass with deficiency(ies)*, or *fail*. Hankins, Eastup, Deaton, Tonn & Seay, P.C.has received a peer review rating of *pass*.

Vail + Knauth, LLP

Vail & Knauth LLP
August 30, 2012

ATTACHMENT 5 G-1

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

COLLIN COUNTY - COOKE COUNTY - DENTON COUNTY

General Manager's Quarterly Report
December 2013
North Texas GCD Management Plan

This quarterly briefing is being provided pursuant to the adopted Management Plan for the quarter ending December 31, 2013.

Well Registration Program:

Current number of wells registered in the District: 1,025 as of December 31, 2013

Aquifers in which the wells have been completed: Trinity and Woodbine

Well Inspection/Audit Program:

2013
Well Inspections

Month	Collin	Denton	Cooke	Total
January	0	0	0	0
February	0	0	0	0
March	0	0	1	1
April	0	2	0	2
May	0	0	0	0
June	0	0	0	0
July	0	0	0	0
August	0	3	0	3
September	0	13	2	15
October	0	0	0	0
November	0	0	0	10
December	0	10	0	31
Total	0	28	3	31

GM Quarterly Report – Management Plan
Quarter Ending 12/31/2013

On-Going Media Outreach Program

While the Management Plan requires an on-going media outreach program to educate the citizens of the requirements to register wells, during this quarter as well as the quarter ended September 30, 2013 the District staff concentrated on following up on the research found through state databases to determine wells drilled after April 1, 2011 that were not properly registered. Notifications were mailed to various well drillers and well owners, based on information obtained from the Texas Water Development Board website (submitted well driller's report). Approximately 99 wells were identified as drilled after April 1, 2011 and needing to be registered. Staff continued to follow up on the delinquent wells during the quarter ending December 31, 2013.

Groundwater Monitoring

Wayne Parkman, Field Technician, accompanied the Texas Water Development Board staff for the 2013 groundwater monitoring event. The Management Plan requires that the District assume the responsibilities of the groundwater monitoring program. This will be accomplished by District staff following the TWDB for two years, assuming the responsibility after this two-year period.

Controlling and Preventing Waste of Groundwater

The Management Plan outlines the following strategies to control and prevent waste of groundwater:

1. Link on website to Best Management Practices, updated routinely to provide helpful tips to control and prevent waste of groundwater
2. Identification of outreach opportunities with regional and local water providers to increase public awareness for prevention of groundwater waste
3. Board and staff will deliver presentations to civic groups and other public opportunities regarding the mission of the District and the need to prevent waste of groundwater

During the first quarter of 2013, pamphlets regarding registering wells were distributed to area water providers. A presentation was made by the General Manager at Myers Park in McKinney in April of 2013 regarding preventing waste of groundwater. As mentioned above, during the third quarter, District staff concentrated on identifying wells that have been drilled after April 1, 2011 which were not properly registered, by utilizing the state website. This strategy continued during the fourth quarter, at the request of the Board of Directors, in an effort to meet the requirements of this section of the Management Plan.

DS:cb

ATTACHMENT 6

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: March 4, 2014

SUBJECT: AGENDA ITEM NO. 6

CONSIDER AND ACT UPON PROPOSAL FROM DR. ZAC HILDENBRAND FOR THE UT-ARLINGTON BARNETT SHALE STUDY

ISSUE
Consider and act upon proposal from Dr. Zac Hildenbrand for the UT-Arlington Barnett Shale Study

BACKGROUND
At the last Board meeting, Dr. Zac Hildenbrand discussed a study the UT-Arlington staff and students are conducting on the Barnett Shale in several counties in North Central Texas. The Shale extends into the extreme southwest part of Cooke County and includes a substantial portion of Denton County. After discussing the matter at the January meeting, the Board requested Dr. Hildenbrand to provide a written proposal to the Board for discussion at the February meeting.

OPTIONS/ALTERNATIVES
The Board has the option of hearing the proposal in detail and declining to participate or to determine a desire to participate in the study.

CONSIDERATIONS
The current information on revenues versus expenses in the North Texas GCD suggests that funds will be available to participate in this study should the Board decide to do so without having to consider adjusting production fees.

STAFF RECOMMENDATIONS
The staff will await decision from the Board on whether or not to participate in the study.

ATTACHMENTS
1. Funding Proposal
2. List of Required Testing for Water Quality Analysis

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E., General Manager

FUNDING PROPOSAL
NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

A comprehensive analysis of groundwater quality in Collin, Cooke and Denton counties

Zacariah L. Hildenbrand[1,2] and Kevin A. Schug[1]

[1] Department of Chemistry and Biochemistry, The University of Texas at Arlington, Arlington, TX 76019

[2] Inform Environmental, LLC, Dallas, TX 75227, www.informenv.com

Significance and Aims

Advancements in unconventional drilling techniques, such as hydraulic fracturing, have made the extraction of natural gas from previously inaccessible deep shale formations both practical and economically advantageous. Hydraulic fracturing involves a highly pressurized injection of water, proppants, and chemical additives to expand fissures or fractures in the shale formation to release the trapped gases. Despite the effectiveness of this technology to liberate sequestered natural gas, it is not without environmental risk. Concerns over environmental stewardship, in conjunction with the prospect of using natural gas as a catalyst towards achieving energy independence, have provided the impetus for multiple investigations designed to characterize the relationship between unconventional natural gas extraction and groundwater quality. In this proposed research study there are four principal aims:

1) Further elucidate the mechanisms through which unconventional natural gas extraction can potentially contribute to groundwater contamination. Previous measurements of elevated heavy metals (arsenic, selenium and strontium) support a hypothesis in which rust, sulfate, and/or carbonate scale from poorly maintained water wells can become mechanically disturbed by vibrations from nearby intense drilling activity, resulting in the liberation of heavy metal ions into the groundwater. We will further examine the likelihood of this process as well as assess the plausibility of more direct mechanisms for potential contamination, such as equipment failures, faulty well casings or mishandling of produced waters.

2) Assess the anthropogenic effects of other aspects of the unconventional drilling process such as the handling of fluid waste and the use of underground injection wells. We have collected samples from fluid waste storage and disposal pits and have discovered harmful chemicals stored within these containment units that could potentially leach into the surrounding surface water and groundwater. We would like to collect more samples from storage and disposal pits to better assess their potential for environmental contamination. Additionally, we would like to collect groundwater samples from nearby underground injection wells to provide further insight into the relationship between groundwater quality and other phases of the unconventional drilling process.

3) Assess changes in groundwater quality since 2011. Only 10 of the 100 samples from the 2011 Barnett Shale study were collected within the North Texas Groundwater Conservation District (Collin, Cooke and Denton counties). A thorough analysis of this region would facilitate a better understanding of overall groundwater quality as well as supporting direct comparisons to previous measurements (Fontenot et al. 2011) and available historical data (Texas Water Resource Board).

4) Develop technologies for environmental remediation of contamination events. Collaborations have been established to develop technologies and environmental strategies that are specifically tailored to extract exogenous chemicals and endogenous groundwater constituents from potentially contaminated groundwater.

For example, we have begun working with a company called American Water Recycling, who has patented thin-layered graphene filter technology to extract organic and heavy metal complexes from groundwater. These efforts have major implications for the treatment of groundwater, the recycling of produced water, and the sequestration of components in hydraulic fracturing fluids. Additionally, we would like to begin working in the field of landscape architecture to facilitate the development of performative landscapes, which are targeted to reduce incidence of environmental fragmentation through deteriorating and/or contaminated ecosystems. Through these particular collaborations, amongst others, possible best practice strategies will be developed.

Background and Previous Work

The Barnett Shale, a 48,000 km^2 shale formation located 1500-2400 meters below 17 counties in North Texas, is one of the most heavily drilled shale formations in the United States with over 16,000 natural gas wells drilled in the past decade and more planned. While this region has a long history of oil and gas activities, the recent boom in unconventional natural gas extraction has resulted in increasing concern among citizens about how practices such as using horizontal drilling and hydraulic fracturing could affect their private well water quality. In a recent study published in the American Chemical Society journal *Environmental Science and Technology*, our team of scientists from The University of Texas at Arlington sampled 100 private water wells to assess the potential effects of natural gas extraction on water quality in the Barnett Shale (Fontenot et al. *Environ. Sci. Technol.* 2013).

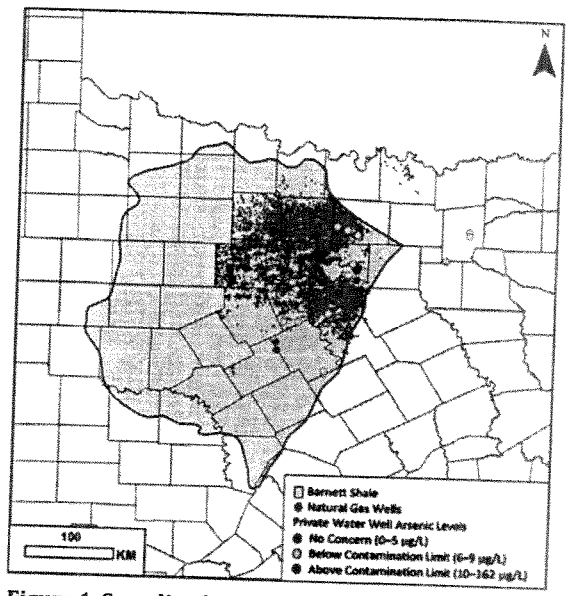


Figure 1. Sampling locations and corresponding arsenic concentrations of sampling sites in relation to neighboring natural gas extraction sites (Fontenot et al. 2013).

Our study incorporated a multi-disciplinary approach to measure groundwater quality in the Barnett Shale using both analytical chemistry and geospatial analysis. Additionally our study provided a "snapshot" analysis of groundwater quality during the summer and fall of 2011, a period when natural gas extraction activities were already well established in the Barnett Shale. We compared our data to a historical database of groundwater quality to provide some context for groundwater in this region prior to the expansion of natural gas extraction activities.

To begin, our team sampled private water wells of varying depths within a 13-county area in North Texas. Of our 100 samples, 91 were drawn from "active extraction areas," sites that had one or more natural gas wells within a five kilometer radius. Another nine samples were taken from sites either inside the Barnett Shale and more than 14 kilometers from a natural gas well, or from reference sites outside the Barnett Shale. We referred to these sites as "non-active/reference areas" (Figure 1).

Our analytical work focused on determination of harmful compounds thought to be associated with natural gas extraction such as methanol, ethanol, heavy metals (arsenic, strontium, selenium, barium, etc.), and BTEX compounds (benzene, toluene, ethylbenzene, and xylenes). Using inductively coupled plasma mass spectrometry (ICP-MS), we found arsenic in 99 of the 100 wells sampled. Notably, 29 of the 91 samples within active extraction areas had arsenic concentrations above the U.S. Environmental Protection Agency's Maximum Contaminant Limit (MCL) of 10 µg/L (Figure 1). The maximum concentration of arsenic we detected within active extraction areas was 161 µg/L, a value nearly 18 times greater than both the maximum concentration among the non-active/reference area samples and historical levels. This is particularly relevant given that arsenic in drinking water has been found to increase the risk for developing liver, kidney and bladder cancers (Smith et al. *Environ. Health Perspect.* 1992). We also found selenium and strontium at elevated concentrations, with selenium detected exclusively within 2 kilometers of natural gas wells (Table 1 and Figure 2).

Using gas chromatography - mass spectrometry (GC-MS) and headspace gas chromatography with flame ionization detection (HS-GC-FID), common tools for the measurement of volatile chemical compounds, it was determined that several water wells contained quantifiable levels of methanol and/or ethanol, chemicals known to be included in hydraulic fracturing fluids. These alcohols can be formed naturally, but have a very short lifespan in the environment before they disappear; so, the levels we found were unusual. We found the highest concentrations in active extraction areas, although we did detect alcohols in a few of the non-active/reference areas as well. We found no evidence of BTEX chemicals and barium levels were all under the contaminant limit.

	Historical Data (1989-99)				Active Extraction Area Wells (N = 91)				Non-active and Reference Area Wells (N = 9)			
	N	Range	Mean ± Std Error	% ≥ MCL	N	Range	Mean ± Std Error	% ≥ MCL	N	Range	Mean ± Std Error	% ≥ MCL
TDS	344	129–3302	670.3 ± 21.5	61	91	200–1900	585.1 ± 35.1*	54.9	9	400–600	500 ± 31.6	77.8
Arsenic	241	1–10	2.8 ± 0.1	0	90	2.2–161.2	12.6 ± 2.2*	32.2	9	4.7–9.0	6.9 ± 0.7*	0
Selenium	329	0.1–50	3.9 ± 0.2	0.3	10	10–108.7	33.3 ± 10.5*	20	–	–	–	–
Strontium	99	20–16700	1028.9 ± 213.7	N/A†	90	66.2–18195	2319.8 ± 330.1*	N/A†	9	52.4–7646.2	1610 ± 787.1	N/A†
Barium	357	0.1–382	57.2 ± 2.9	0	90	1.8–173.7	32.3 ± 3.3*	0	9	2.9–60	22.4 ± 11.3*	0
Methanol	–	–	–	N/A	24	1.3–329	33.6 ± 13.3	N/A	5	1.2–62.9	27.4 ± 13.7	N/A
Ethanol	–	–	–	N/A	8	1–10.6	4.5 ± 1.2	N/A	4	2.3–11.3	6.8 ± 2.4	N/A

Table 1. Historical Data compared to measurements collected in active extraction areas and non-active/reference areas. Historical data for the counties sampled in this study were obtained at www.TWDB.state.TX.us/groundwater/ . Maximum Contaminant Limits (MCL) obtained from the Environmental Protection Agency's (EPA) National Primary Drinking Water Regulations, 2009. TDS MCL = 500 mg/L, Arsenic MCL = 10 µg/L, Selenium MCL = 50 µg/L, Barium MCL = 2000 µg/L, N/A indicates no MCL has been established.
† EPA recommends stable strontium values in drinking water do not exceed 4,000 µg/L

The fact that elevated compounds occur on average less than 2 km away from natural gas wells and that these compounds were historically at low levels suggests there may be a correlation between natural gas extraction and elevated levels of heavy metals and alcohols in private well water (Figure 2). We found no BTEX chemicals so we do not have any evidence of direct fracking fluid contamination; however, there are a number of indirect pathways through which the heavy metals and alcohols could be introduced. For example, industrial accidents such as faulty gas well casings or improper wastewater disposal could introduce dangerous compounds from produced or flowback waters into shallow groundwater. Additionally, large withdrawals of groundwater to be used in hydraulic fracturing operations could theoretically result in a localized decline in the water table. Such decreases can be associated with higher arsenic content in waters drawn from shallower wells. Another scenario to explain elevated heavy metals could be the mechanical vibrations produced from natural gas drilling activity. In this scenario, poorly maintained private water wells that accumulate rust, sulfate, and/or carbonate scale, can become mechanically disturbed by vibrations from nearby intense drilling activity. Once the rust and scale in the water well are disturbed, arsenic, selenium, and strontium that were previously bound in oxide complexes could be mechanically liberated and released into the well water.

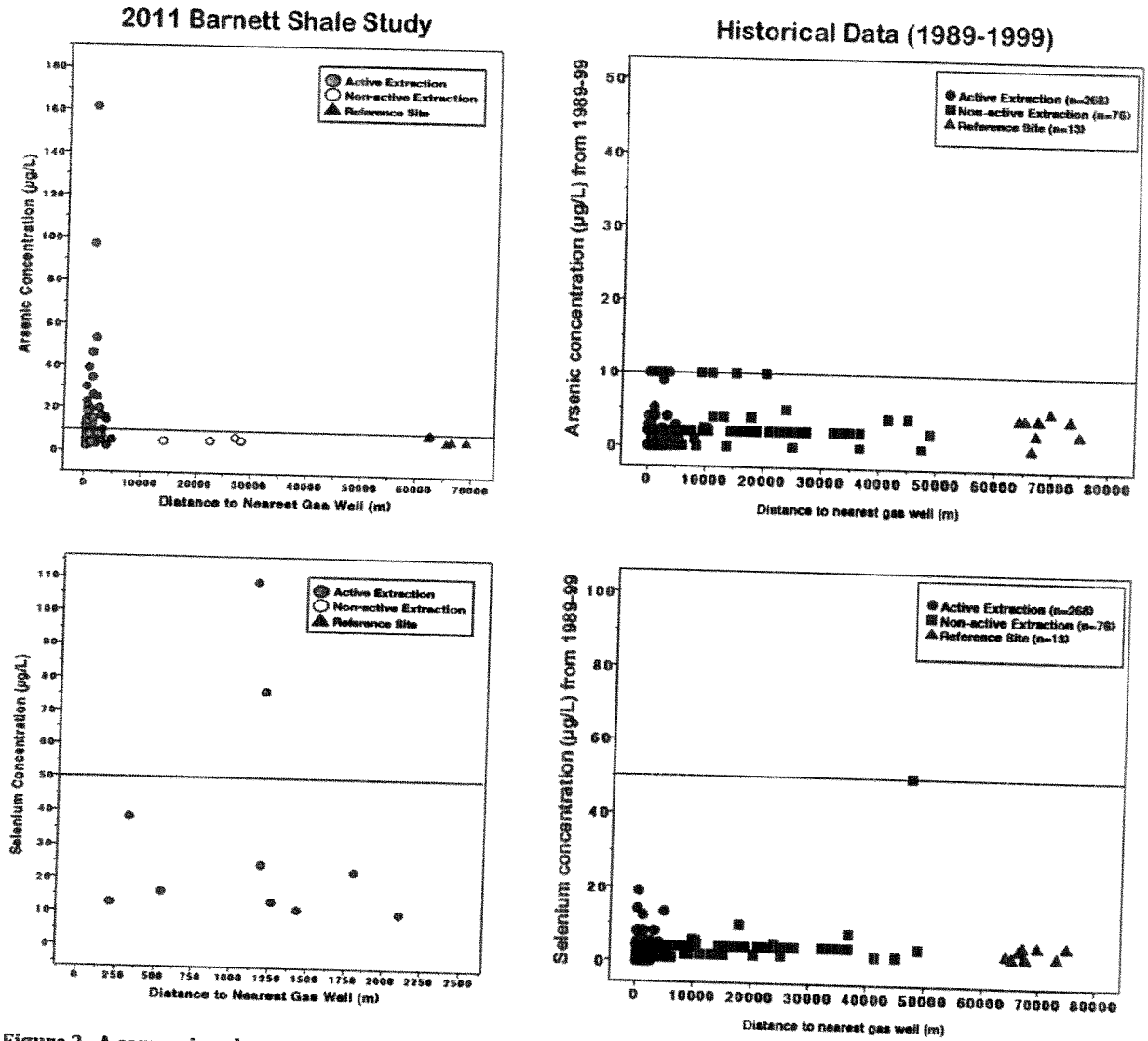


Figure 2. A comparison between the data collected in 2011 and a historical data set (1989-1999) of arsenic and selenium concentrations. These illustrations indicate a significant increase in metals concentrations. Additionally, the historical data (right side) support the notion that the observed exceedances in arsenic and selenium concentrations in 2011 (left side) were not the result of disproportional sampling size (active extraction vs. non-active and reference sites) or a sampling bias. EPA MCL thresholds are illustrated by horizontal lines and are representative of values of 10 and 50 µg/L for arsenic and selenium, respectively.

While our initial study does not conclusively identify the causes of elevated constituents, it does provide an impetus for continued research in the Barnett Shale to further characterize and quantify the anthropogenic effects that unconventional natural gas extraction has on groundwater quality. Importantly, significant care was taken in our previous study to demonstrate clear impartiality in our scientific findings; this work was funded by personal discretionary funds only, with no external bias.

Research Design and Objectives

In addition to building on the data acquired in the 2011 study, the primary objectives of this proposed research is to: a) further elucidate the mechanisms through which unconventional natural gas extraction can potentially contribute to groundwater contamination, b) assess the anthropogenic effects of other aspects of the unconventional drilling process such as underground injection wells, and c) characterize changes in groundwater quality since 2011.

In order to further elucidate the mechanisms through which unconventional natural gas extraction can potentially contribute to groundwater contamination, we will employ a series of developed and new analytical techniques to address some of the hypotheses generated by our first study. For example, one interpretation of the arsenic, selenium and strontium measurements was that poorly maintained private water wells can accumulate rust, sulfate, and/or carbonate scale, which can become mechanically disturbed by vibrations from nearby intense drilling activity, thus mechanically liberating these heavy metal ions into the groundwater. Collecting measurements for major ions (potassium, sodium, magnesium, sulfate, chloride, fluoride, iron, carbonate and bicarbonate) will address this hypothesis and help assess whether or not the mobilization of heavy metal ions is indirectly attributed to vibrations resulting from gas drilling. Additionally, total organic carbon (TOC), inorganic carbon (IC), purgeable organic carbon (POC) and total nitrogen measurements will allow for an assessment of well integrity allowing us to characterize whether instances of heavy metal contamination are associated with natural gas extraction activities or well-owner neglect. These additional analyses will be performed at the University of Texas at Arlington's Shimadzu Center for Advanced Analytical Chemistry. Additional quantification of methane and other dissolved gases will be performed through the Bureau of Economic Geology at the University of Texas at Austin.

Collecting 100 samples throughout the North Texas Groundwater Conservation District will allow us to characterize the relative environmental effects of underground injection wells, providing further insight into the relationship between groundwater quality and other phases of the unconventional drilling process. GC-MS will be used for the quantification of different industrial compounds used in hydraulic fracturing, as well as ICP-MS and ICP-OES for the characterization of metals and minerals. TOC analyses will provide additional insight into instances of hydrocarbon or organic solvent contamination, and measurements of total nitrogen (TN) will allow us to gauge the relative influence of agricultural contamination.

To evaluate changes in groundwater quality throughout the North Texas Groundwater Conservation District since 2011, samples will be collected from private water wells sites that were sampled as part of the 2011 study. Measurements will be compared to the 2011 data to determine whether increases in natural gas extraction activity, have imparted changes on the groundwater. In particular, we can evaluate the metal (alkaline earth and transition metals) ion signatures characteristic of a given county within the Barnett shale (Carlton et al, *unpublished report*) and determine whether there are changes in these metal profiles as a function of increased drilling activity. GC-MS analyses will also identify whether chemical compounds have been introduced into the groundwater since being sampled previously in 2011.

Collectively, the sampling of 100 well sites within the North Texas Groundwater Conservation District, coupled with the implementation of additional analytical methods and the use of a recently established library of reference measurements, will allow us to further evaluate groundwater quality in the area and more thoroughly assess the environmental ramifications of unconventional natural gas extraction. Additionally, we are developing technologies so that if instances of groundwater contamination are detected within the North Texas Groundwater Conservation District, they can be remediated quickly and efficiently.

Research Team

Zacariah L. Hildenbrand, Ph.D., Faculty Research Associate at The University of Texas at Arlington and Principal of Inform Environmental, LLC

Dr. Hildenbrand received his Ph.D. in Structural Biochemistry from the University of Texas at El Paso and completed a post-doctoral research fellowship at the University of Texas Southwestern Medical Center in Dallas. He is one of the co-principal investigators on the 2011 study of groundwater quality in the Barnett shale where he contributed to study design, sample coordination, basic water quality analyses, data interpretation and manuscript writing. Dr. Hildenbrand will be contributing to study design, project coordination, sample collection, basic water quality analysis, manuscript writing, and participant relations in the current proposed study.

Kevin A. Schug, Ph.D., Associate Professor & Shimadzu Distinguished Professor of Analytical Chemistry at The University of Texas at Arlington

Dr. Schug received his Ph.D. in Chemistry from Virginia Tech and completed a post-doctoral research fellowship at the University of Vienna, Austria. He is recipient of several national separation science awards and is an internationally-recognized analytical chemist. He is the corresponding author on the recent article published in the *Environmental Science and Technology* (Fontenot et al. *Environ. Sci. Technol.* 2013) describing groundwater quality in the Barnett shale. Dr. Schug will be contributing to study design, coordination of analyses, data interpretation, and manuscript writing.

Brian Fontenot, Ph.D., Affiliated scientist at The University of Texas at Arlington and Environmental Scientist at U.S. Environmental Protection Agency, Region 6

Dr. Fontenot received his Ph.D. in Quantitative Biology from the University of Texas at Arlington where he also completed a post-doctoral research fellowship. He is one of the co-principal investigators on the 2011 study of groundwater quality in the Barnett shale where he contributed to study design, sample collection, basic water quality analyses, statistical analyses, data interpretation, and manuscript writing. Dr. Fontenot will be contributing to the design and application of statistical analyses, as well as data interpretation and manuscript writing in the current proposed effort as an independent consultant.

Jesse Meik, Ph.D., Assistant Professor at Tarleton State University

Dr. Meik received his Ph.D. in Quantitative Biology from the University of Texas at Arlington in 2009, and is currently an Assistant Professor in the Department of Biological Sciences at Tarleton State University. He has considerable experience in data analysis using various platforms including R and SAS, and specializes in model selection and multivariate statistical analysis. Dr. Meik will be contributing to the design and application of statistical analyses as well as to data interpretation and manuscript writing.

Doug Carlton, Jr., B.S., Ph.D. candidate at The University of Texas at Arlington

Mr. Carlton will be receiving his Ph.D. in Analytical Chemistry from the University of Texas at Arlington. He has considerable knowledge and experience with GC-MS, HS-GC-FID, ICP-MS, ICP-OES and TOC/TN analyses and performed all of the advanced chemical analyses for the 2011 study of groundwater quality in the Barnett Shale. Mr. Carlton will be contributing to study design, data interpretation and manuscript writing, in addition to performing a majority of the chemical analyses.

Jayme Walton, M.S., GIS specialist at SWCA Environmental Consultants

Ms. Walton received her M.S. in Biology from The University of Texas at Arlington. She has been a contributing scientist to the 2011 study of groundwater quality in the Barnett Shale where she

performed sample collection, basic water quality analyses and geospatial mapping analyses. Ms. Walton will be contributing to GIS geospatial analyses and to manuscript writing.

Scott Nelson, M.S., Founder and President of FracTest, LLC

Mr. Nelson received his M.S. in International Business from Whitworth University. He is founder of FracTest, a technology company whose hydrogeological model and software serves to pinpoint and quantify a wide range of weighted risks to drinking and surface water associated with horizontal drilling and hydraulic fracturing. Through the use of this software, the team will be better equipped to identify and analyze areas that hold a higher risk of contaminant presence and migration. Mr. Nelson will be performing all of the modeling analyses as well as contributing to writing of the manuscript.

Grace Elliot, B.S., Environmental Scientist at CB&I

Ms. Elliot received her B.S. in Environmental Science from Texas Christian University. She has extensive experience in groundwater sampling, analysis and monitoring and will be contributing to sample collection and will also perform basic water quality analyses.

Funding Agreement and Dissemination of Funds

Financial support for this prospective research study is requested by Inform Environmental, LLC, on behalf of The University of Texas at Arlington. Any award would be initially granted to Inform Environmental, LLC, and distributed to The University of Texas at Arlington as delineated in the budget listed below. It is understood the upon accepting financial support for the proposed research that both Inform Environmental, LLC, and The University of Texas at Arlington are responsible for generating the agreed upon deliverables and will present the results in a peer-reviewed scientific journal in an objective and unbiased manner.

Budget

	UT-Arlington	Inform Environmental, LLC	Total
A. SENIOR PERSONNEL			
1 Schug			
2 Hildenbrand			
3 Fontenot			
4 Meik			
5 Walton			
TOTAL SENIOR PERSONNEL	0	0	0
B. OTHER PERSONNEL			
Post Docs	0	0	0
Technician *(33% support for 6 mo.)	5,000	0	0
Graduate Student *(33% support for 6 mo.)	4,000	0	12,000
Undergraduate Students	0	0	0
Secretarial	0	0	0
Other	0	0	0
TOTAL SALARY & WAGES	9,000	0	12,000
C. FRINGE BENEFITS			
1 Schug	0	0	0
2 Hildenbrand	0	0	0
3 Fontenot	0	0	0
4 Meik	0	0	0
5 Walton	0	0	0
Technician (10%)	500	0	500
Graduate Student (10%)	400	0	400
Undergraduate Students	0	0	0
Others	0	0	0
TOTAL FRINGE BENEFITS	900	0	900
TOTAL SALARY, WAGES, BENEFITS	9,900	0	9,900
D. EQUIPMENT			
TOTAL EQUIPMENT	0	0	0
E. TRAVEL			
Sampling/Fuel		0	
Total Travel	0	0	0
G. OTHER DIRECT COSTS			
1. Material and Supplies	4,000	0	4,000
2. Publication Costs	0	0	0
3. Sampling Services	0	11,000	0
4. Analytical Services	0	0	0
6. Other			
Other (Tuition)	0	0	0
TOTAL OTHER DIRECT COSTS	4,000	11,000	15,000
TOTAL DIRECT COSTS	**13,900**	**11,000**	**24,900**
MODIFIED TOTAL DIRECT COSTS	13,900	11,000	24,900
INDIRECT COSTS @ 51.5%	7,158	0	7,158
TOTAL DIRECT & INDIRECT COSTS	21,058	11,000	32,058
RESIDUAL FUNDS	0	0	0
AMOUNT OF REQUEST	**$21,058**	**$11,000**	**$32,058**

UT-Arlington M&O costs	
GC-MS	2,000
TOC/TN Analysis	500
ICP-OES metals	1,000
Sampling materials	500
TOTAL	4,000

*Technician and graduate student are already partially funded by the Prairielands and Upper Trinity GCD.

Timeline and Deliverables

1) Participant recruitment will begin with UT-Arlington and Groundwater Conservation District (three GCDs assumed to be participating) press releases and phone calls/emails to past study participants and previously interested well owners. It is estimated that six weeks will be required to commit 300 groundwater samples from Prairielands, Upper Trinity, North Texas GCD regions
   Estimated time frame: January 20 – March 3, 2014 (Efforts have already begun in the Prairielands and Upper Trinity GCD regions)

2) Sampling and basic water quality analyses will begin in January (performed concurrently with participant recruitment) and will be performed over a 12-week period.
   Estimated time frame: January 20 – April 20, 2014.
   Deliverable: A preliminary progress report with illustrations of sample sites in relation to neighboring natural gas extraction sites.

3) Advanced analytical chemistry measurements will be performed as samples are collected in the field. The GC-MS analyses of unconventional natural gas extraction constituents (volatile and semi-volatile chemicals) are time-sensitive and will be performed within one week of a given sample being collected. All other analyses (ICP-MS and ICP-OES, TOC/TN) will be performed within two weeks of a given sample being collected. An additional month will be required for interpretation of all spectrometric data.
   Estimated date of completion: June 7, 2014.

4) Data interpretation, geospatial and statistical analyses, and hydrogeological modeling will be performed over an 8-week period.
   Estimated date of completion: August 7, 2014

5) The results and interpretations of the data will be compiled into a manuscript to be submitted for publication in a peer-reviewed scientific journal.
   Estimated date of completion: September 1, 2014.
   Deliverable: A power point presentation and executive summary of the results. The complete manuscript, with all supplementary materials, will be made available immediately upon acceptance of manuscript for publication. It should be noted that neither Inform Environmental, LLC nor The University of Texas at Arlington has control over the duration of the review process. Typically 2-4 months are required to receive review comments, address concerns, and incorporate additional data to facilitate a complete acceptance for publication.

List of Required Testing for Water Quality Analysis

Basic Water Quality Analysis
Temperature
Dissolved Oxygen
pH
Specific Conductance
Oxidation Reduction
Salinity
Total Dissolved Solids

Metals and Minerals Analysis
Ag, Silver
Al, Aluminum
As, Arsenic
Au, Gold
B, Boron
Ba, Barium
Be, Beryllium
Bi, Bismuth
Ca, Calcium
Cd, Cadmium
Ce, Cerium
Co, Cobalt
Cr, Chromium
Cs, Cesium
Cu, Copper
Dy, Dysprosium
Er, Erbium
Eu, Europium
Fe, Iron
Ga, Gallium
Gd, Gadolinium
Ge, Germanium
Hf, Hafnium
Hg, Mercury
Ho, Holmium
I, Iodine
In, Indium
Ir, Iridium
K, Potassium
La, Lanthanum
Li, Lithium
Lu, Lutetium
Mg, Magnesium

Mn, Manganese
Mo, Molybdenum
Na, Sodium
Nb, Niobium
Nd, Neodymium
Ni, Nickel
Os, Osmium
P, Phosphorus
Pb, Lead
Pd, Palladium
Pr, Praseodymium
Pt, Platinum
Rb, Rubidium
Re, Rhenium
Rh, Rhodium
Ru, Ruthenium
S, Sulfur
Sb, Antimony
Sc, Scandium
Se, Selenium
Si, Silicon
Sm, Samarium
Sn, Tin
Sr, Strontium
Ta, Tantalum
Tb, Terbium
Te, Tellurium
Th, Thorium
Ti, Titanium
Tl, Thallium
Tm, Thulium
U, Uranium
V, Vanadium
W, Tungsten
Y, Yttrium
Yb, Ytterbium
Zn, Zinc
Zr, Zirconium

Industrial Compound Analysis
Methanol
Ethanol
Isopropanol
n-Propanol
Propargyl Alcohol

n-Butanol
Ethylene Glycol
Ethylene Glycol Butyl Ester
Benzene
Toluene
Ethylbenzene
m-Xylene
p-Xylene
o-Xylene
Mesitylene
Benzyl Chloride
Formaldehyde
Acetaldehyde
Glutaraldehyde
Dimethyl Formamide
Naphthalene
1-Methyl Naphthalene
2-Methyl Naphthalene
1-Naphthol
2-Naphthol
PEG 200
Bisphenol A
d-Limonene
Acetophenone
1,2,4-Trimethyl Benzene
Cumene
2-Ethyl-1-Hexanol
1,2-Propanediol

TOC/TN Analysis
Total Organic Carbon
Total Carbon
Inorganic Carbon
Particulate Organic Carbon
Total Nitrogen

Dissolved Gases
Methane
Propane

ATTACHMENT 7

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: March 4, 2014

SUBJECT: AGENDA ITEM NO. 7

UPDATE AND POSSIBLE ACTION ON THE NORTHERN TRINITY/WOODBINE AQUIFER GAM OVERHAUL PROJECT AND THE DEVELOPMENT OF PROPOSED DESIRED FUTURE CONDITIONS (DFCS)

ISSUE

Update and possible action on the Northern Trinity/Woodbine Aquifer GAM Overhaul Project and the development of proposed Desired Future Conditions (DFCs)

BACKGROUND

Board Member Eddy Daniel has been designated by the District as the District's representative on Groundwater Management Area 8 (GMA 8). Mr. Daniel is also serving as Chair of that group.

CONSIDERATIONS

The GMA 8 met on January 21, 2014. Mr. Daniel will present to the Board the results of that meeting and provide information and insight on the direction the GMA 8 will be taking to establish DFCs.

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E. General Manager

ATTACHMENT 8

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: March 4, 2014

SUBJECT: AGENDA ITEM NO. 8

UPDATE AND POSSIBLE ACTION REGARDING THE PROCESS FOR THE DEVELOPMENT OF DESIRED FUTURE CONDITIONS (DFCS) INCLUDING THE CONSIDERATION AND POSSIBLE APPROVAL OF CONSULTING SERVICES

ISSUE

Update and possible action regarding the process for the development of Desired Future Conditions (DFCs) including the consideration and possible approval of consulting services

BACKGROUND

The DFCs are going to be required for all Groundwater Management Areas (GMAs) by May 2016 according to the new schedule provided by the Texas Water Development Board (TWDB).

CONSIDERATIONS

The Groundwater Availability Model (GAM), which has been underway for the past 18 months, will be completed this year. This updated GAM will hopefully be used by the TWDB as the basis for determining the available groundwater in the Trinity Aquifer.

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E., General Manager

ATTACHMENT 9

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: March 4, 2014

SUBJECT: AGENDA ITEM NO. 9

CONSIDER AND ACT UPON REQUEST TO WAIVE REGISTRATION FEES

ISSUE
Consider and act upon request to waive registration fees

BACKGROUND
Cross Timber Water Supply Corporation, formerly known as the Bartonville Water Supply Corporation, is a public water supplier serving a significant number of connections in southeast Denton County. The Corporation has previously registered eight wells with the District. The Corporation submitted a letter to the District requesting waiving registration fees for their ninth well.

The ninth well was approved for drilling by the Texas Commission on Environmental Quality (TCEQ) on November 9, 2005. The Corporation did not begin work on the well until September 1, 2010. According to information provided, the well was completed on or about March 4, 2013. The Corporation had previously registered their wells with the District during the registration fee grace period in 2011. The ninth well was not registered at that time, although the information from the TCEQ shows construction was underway at that time.

OPTIONS/ALTERNATIVES
The Board has the right to waive the registration fee for the Corporation or it may choose to require that the registration fee be paid because the registration did not occur until after the grace period had expired.

CONSIDERATIONS
The $100 non-refundable registration fee became effective on March 1, 2013. The refundable driller's report deposit fee became effective on February 1, 2012, but is only refundable upon receipt of the driller's report within 60 days of the well completion.

The application for the well was not received until January 2, 2014. According to meter readings received from the Corporation, the well was turned on in September 2013. The District has still not received the driller's report at this time.

STAFF RECOMMENDATIONS
The staff would appreciate direction from the Board on this matter.

ATTACHMENTS
Letter dated January 6, 2014 from

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E., General Manager

CROSS TIMBERS WATER SUPPLY CORPORATION

January 6, 2014

RECEIVED
JAN 13 2014
BY: NTGCD

Ms. Carmen Catterson
North Texas GCD
PO Box 508
Gainesville, TX 76241

RE Well # 1450

Dear Carmen:

We began the drilling of a new well on September 1, 2010 and completed the drilling on April 23, 2013. A number of delays occurred that led to this extended period of time for completion. The well was approved for construction in a November 29, 2005 letter from the TCEQ. I have attached the letter from the TCEQ. Subsequent to the approval, the well was flushed, chemical analysis performed and approved, and the well put into use for production and distribution in October 2013.

I have been informed that there are additional fees due on this well for registration. I respectfully request that these fees be waived.

Sincerely,

Lloyd Hanson
Controller

CROSS TIMBERS Water Supply Corporation

2032 E Hickory Hill Road, Argyle, TX 76226-3125 TEL (940) 584-0780 FAX (940) 584-0781

PWS/ 0610020/CO

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 23, 2013

Mr. Kerry D. Maroney, P.E.
Biggs & Mathews, Inc.
2500 Brook Ave
Wichita Falls, TX 76301

Re: Bartonville WSC - Public Water System ID No. 0610020
Proposed Stargate Water Well Completion
Engineer Contact Telephone: (940) 766-0156
Plan Review Log No.: P-03052013-023
Denton County, Texas

CN602661530; RN101439230

Dear Mr. Maroney:

The constructed well is approved for **interim** use and may now be **temporarily** placed into service based on our review of well completion material received on March 5, 2013, with your letter dated March 4, 2013. The project generally meets the minimum requirements of the Title 30 Texas Administrative Code Chapter 290 - Rules and Regulations for Public Water Systems except the following:

- The chemical analysis report submitted shows that the concentration of Aluminum exceeds the secondary contaminant level. If the official analysis (see below) indicates exceedances, and if customer complaints are received, treatment or blending to reduce the constituent will be required.

The preliminary chemical samples collected by the water system or their contractor are for interim approval only. For final approval prior to the new well being placed into permanent service the following conditions must be met:

1. It is the water system's responsibility to contact the **TCEQ's Drinking Water Quality Team in Austin at 512/239-4691** to arrange for the collection of the official chemical samples which must be completed within 120 days from the date of this letter.

2. The results of the official chemical analysis of these samples will be used to conduct a vulnerability assessment, develop a chemical monitoring plan and grant final approval for the new source.

3. If official chemical analysis testing confirms that a regulated constituent does not meet secondary constituent levels, additional treatment, blending, or public notice may be required. The Drinking Water Quality Team will notify the water system of any additional special requirements for this public water supply source. Plans for water treatment must be reviewed and approved by the Utilities Technical Review Team.

The well completion data consisted of the following:

- State of Texas Well Report;
- Material setting and cementing data;
- 36-hour pumping test results;
- Executed and recorded sanitary control easement;
- U. S. Geological Survey 7.5 minute map showing the well location;
- Three bacteriological sampling results showing no coliform contamination; and,
- Chemical analysis results.

The well completion data describes construction of the following:

- One public water supply well drilled to 1,500 feet with 1,156 linear feet (l.f.) of 18-inch outer diameter (o.d.) steel casing, pressure-cemented 1,154 l.f., 226 l.f. of 12-inch o.d. stainless steel slot screen, 114 l.f. of 12-inch o.d. blank steel liner, with 446 l.f. underream and gravel pack; the well yield is 750 gallons per minute (gpm) with a 300 horsepower, 12-stage submersible pump set at 1,290 feet deep. The design capacity of the pump is 750 gpm at 1,200 feet total dynamic head (TDH);

The well is located at the new Stargate water plant site, west of FM 407 in Bartonville, Texas.

Texas Water Code Section 36.0015 allows for the creation of groundwater conservation districts (GCD) as the preferred method of groundwater management. GCD's manage groundwater in many counties and are authorized to regulate production and spacing of water wells. **Public water systems drilling wells within an existing GCD are responsible for meeting the GCD requirements.** The authorization provided in this letter does not affect GCD authority to manage groundwater or issue permits.

The well was approved for construction in our November 29, 2005 letter (Plan Review Log No. 200510-039). The project engineer performed a new pollution hazards survey and found no potential or present pollution hazards as required in 30 TAC 290.41 (c)(1)(A-D).

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittals to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on our website at the address shown below.

http://www.tceq.texas.gov/utilities/planrev.html

For future reference, you can review part of the Utilities Technical Review Team's database to see if we have received your project. This is available on the TCEQ's homepage at the following address:

http://www.tceq.texas.gov/utilities/planrev.html#status

You can download most of the well construction checklists and the latest revision of Chapter 290 "Rules and Regulations for Public Water Systems" from this site.

If you have any questions concerning this letter, please contact Thomas Herrera at (512) 239-1490, by email at "Thomas.Herrera@tceq.texas.gov" or by correspondence at the following address:

Utilities Technical Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,

Deborah Helstrom, P.E.
Utilities Technical Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

for Ada Lichaa, P.G., Manager
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

TH/av

cc: Bartonville WSC, Attn: Jim Leggieri; 1911 E. Jeter Rd., Bartonville, TX 76226
TCEQ Central Records PWS File 0610020
TCEQ Region No. 4 Office - Arlington

ATTACHMENT 10

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: March 4, 2014

SUBJECT: AGENDA ITEM NO. 10

CONSIDER AND ACT UPON REQUEST FOR CLARIFICATION OF TEMPORARY RULES REGARDING DOMESTIC USE EXEMPTION

ISSUE

Consider and act upon request for clarification of Temporary Rules regarding domestic use exemption.

BACKGROUND

Recently Dale Chepulis of Double D Drilling contacted the District expressing his disagreement with the staff's interpretation of District Rule 2.1(a)(1) and (2). These rules describe wells exempt from fee payment and reporting requirements. The District staff interpretation of these rules, based upon the belief that the Board intended exempt wells to be wells used by an individual or household to support domestic activity. This is consistent with the definition of domestic use described in Texas Commission on Environmental Quality (TCEQ) Water Definitions in Chapter 297.

Mr. Chepulis first came to the attention of the District after a staff member cross checked the well registration information maintained by the District with the Submitted Driller Report Database held by the Texas Department of Licensing and Regulation (TDLR). After receiving a letter from the District stating that none of his wells had been registered since registration began in April 2011, Mr. Chepulis submitted 60 applications in August 2013. All of these applications have been completed by the District staff as time permitted.

The staff has found in many cases the well registration application information submitted by Mr. Chepulis does not agree with the information on the Driller's Report submitted to the State of Texas. In some cases, the data regarding gallons per minute production is left blank. The majority of the applications examined to date reflect well production at 25 gallons per minute. One well submitted as domestic was found to be a public water supply system serving 15-25 houses when checked by District staff.

OPTIONS/ALTERNATIVES

The Board of Directors may choose to further refine the definition of exempt wells in the Rules in order to clarify for everyone the Board's intention on exempt and non-exempt wells. The staff has been under the assumption that the District's mission was to secure as much data on water production withdrawals from the Trinity and Woodbine Aquifers as possible in order to better understand and plan for future groundwater use and the defined future conditions which must be set by the District by May 2016.

CONSIDERATIONS

The Board may desire to establish a maximum capacity for domestic wells. This matter has been discussed in the past and Board members have indicated it is an issue that should be addressed in the future. The District's legal counsel plans to be present and provide an opportunity for the Board to

discuss this matter in executive session so the Board members have a better understanding of their responsibilities and options concerning this matter.

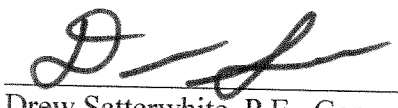
STAFF RECOMMENDATIONS

The staff recommends that the Board consider revisiting the definition of exempt and non-exempt wells to further clarify for everyone the Board's intention for exempt wells.

ATTACHMENTS

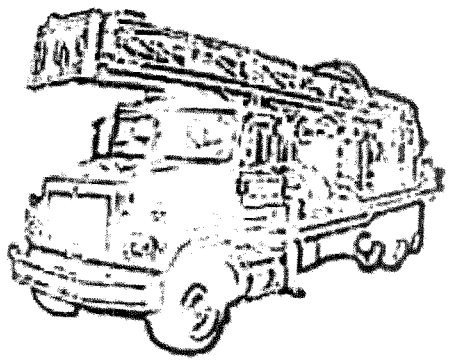
1. Request for clarification of Temporary Rules regarding domestic use exemption
2. Section 2.1 of the Temporary Rules
3. 297 Rules

PREPARED AND SUBMITTED BY:



Drew Satterwhite, P.E., General Manager

DOUBLE D DRILLING



P.O. Box 483, Lewisville Texas 75067
Cell (972) 834-6982
E-mail: dalechepulis@hotmail.com

January 23, 2014

To: North Texas Groundwater Conservation District

Because of a recent discussion with one of my customers, Martin and Chris Rakoci, I would like the Board to clarify the rules regarding Rule 2.1 (a) 1 stating "of any size or capacity use solely for domestic use" and subsequent clarification and interpretation of the word " Domestic " as used in the Definition of Terms item # 10.

The Rakoci's live at 2551 Rockhaven Dr. and have a well that produces approx. 70 gpm and is used for irrigating their property only.

I would like to be put on the agenda along with the Rakosi's to address this issue.

Thanks,

Dale Chepulis

Rule 1.11 Time Limits.
Applications, requests, or other papers or documents required or allowed to be filed under these Rules or by law must be received for filing by the District within the time limit for filing, if any. The date of receipt, not the date of posting, is determinative of the time of filing. Time periods set forth in these rules shall be measured by calendar days, unless otherwise specified.

Rule 1.12 Amending of Rules.
The Board may, following notice and hearing, amend or repeal these rules or adopt new rules from time to time.

SECTION 2.
APPLICABILITY OF REGULATORY REQUIREMENTS; EXEMPTIONS

Rule 2.1 Wells Exempt from Fee Payment, Metering, and Reporting Requirements of These Temporary Rules.

(a) The requirements of these Temporary Rules relating to the payment of fees under Section 7, the requirement to install and maintain a meter under Section 8, and the requirement to report to the District the amount of water produced from a well under Section 3 do not apply to the following types of wells:

1. All wells, existing or new, of any size or capacity used solely for domestic use, livestock use, or poultry use;

2. An existing well or new well that does not have the capacity, as equipped, to produce more than 25 gallons per minute and is used in whole or in part for commercial, industrial, municipal, manufacturing, or public water supply use, use for oil or gas or other hydrocarbon exploration or production, or any other purpose of use other than solely for domestic, livestock, or poultry use, except as provided by Subsection (b) of this rule; or

3. Leachate wells, monitoring wells, and piezometers.

(b) For purposes of determining whether the exemption set forth under Subsection (a)(2) applies, the capacity of a well that is part of a well system shall be determined by taking the sum of the capacities of each of the individual wells, as equipped, in the system. If the total sum of the capacities is greater than 25 gallons per minute, the well system and the individual wells that are part of it are not exempt from the fee payment, metering, and reporting requirements of these rules.

(c) A well exempted under Subsection (a) will lose its exempt status if the well is subsequently used for a purpose or in a manner that is not exempt under Subsection (a).

(d) A well exempted under Subsection (a)(2) will lose its exempt status if, while the well was registered as an exempt well, the District determines that the well had the capacity, as equipped, to produce more than 25 gallons per minute. Such wells are subject to the fee payment, metering, reporting, and other requirements of these Temporary Rules, and may be subject to enforcement under Section 9.

(e) The owner of a new well that is exempt under this Rule shall nonetheless register the well with the District, as required under Section 3.

Rule 2.2 Wells Subject to Fee Payment, Metering, and Reporting Requirements of These Temporary Rules

All wells not described as exempt under Rule 2.1(a) are subject to the fee payment, metering, reporting, registration, and other requirements of these Temporary Rules. Such wells include wells with a capacity, as equipped, to produce more than 25 gallons per minute and that are used in whole or in part for any purpose of use other than solely for domestic use, livestock use, or poultry use.

Rule 2.3 Exemption from Production Fees for Groundwater Used for Certain Emergency Purposes

(a) Groundwater produced within the boundaries of the District is exempt from the assessment of applicable Water Use Fees and Groundwater Transport Fees otherwise required by Section 7 if the groundwater is used by a fire department or an emergency services district solely for emergency purposes and the use is qualified under Subsection (b).

(b) To qualify for the exemption provided for in Subsection (a), a fire department or emergency services district that uses groundwater produced from within the District, or a person that supplies groundwater produced from within the District to a fire department or emergency services district, shall submit to the District a Water Production Report that complies with Rule 3.10.

Rule 2.4 Exemption from Production Fees for Groundwater Used for Maintenance Purposes

Groundwater used for the purposes of flushing lines, tanks, or fire hydrants as required by TCEQ are exempt from fees if an approved metering device or an alternative measuring method approved by the District is used. These amounts shall be noted on the water production report and subtracted from the total amount pumped.

Rule 2.5 Exemption from Production Fees, Metering, and Reporting Requirements for Groundwater Used for Well Development

Groundwater produced from a well during its development or rehabilitation, including groundwater used in pump tests, is exempt from the requirements relating to the payment of fees

(11) Claim--A sworn statement filed under Texas Water Code, §11.303.

(12) Commencement of construction--An actual, visible step beyond planning or land acquisition, which forms the beginning of the on-going (continuous) construction of a project in the manner specified in the approved plans and specifications, where required, for that project. The action must be performed in good faith with the bona fide intent to proceed with the construction.

(13) Conservation--Those practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

(14) Conserved water--That amount of water saved by a water right holder through practices, techniques, or technologies that would otherwise be irretrievably lost to all consumptive beneficial uses arising from the storage, transportation, distribution, or application of the water. Conserved water does not mean water made available simply through its non-use without the use of such practices, techniques, or technologies.

(15) Dam--Any artificial structure, together with any appurtenant works, which impounds or stores water. All structures which are necessary to impound a single body of water shall be considered as one dam. A structure used only for diverting water from a watercourse by gravity is a diversion dam.

(16) Diffused surface water--Water on the surface of the land in places other than watercourses. Diffused water may flow vagrantly over broad areas coming to rest in natural depressions, playa lakes, bogs, or marshes. (An essential characteristic of diffused water is that its flow is short-lived.)

(17) District--Any district or authority created by authority of the Texas Constitution, either Article III, §52, (b), (1) and (2), or Article XVI, §59.

(18) Domestic use--Use of water by an individual or a household to support domestic activity. Such use may include water for drinking, washing, or culinary purposes; for irrigation of lawns, or of a family garden and/or orchard; for watering of domestic animals; and for water recreation including aquatic and wildlife enjoyment. If the water is diverted, it must be diverted solely through the efforts of the user. Domestic use does not include water used to support activities for which consideration is given or received or for which the product of the activity is sold.

(19) Drought of record--The historic period of record for a watershed in which the lowest flows were known to have occurred based on naturalized streamflow.

ATTACHMENT 11

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: MARCH 4, 2014

SUBJECT: AGENDA ITEM NO. 11

CONSIDER AND ACT UPON COMPLIANCE AND ENFORCEMENT ACTIVITIES FOR VIOLATIONS OF DISTRICT RULES

ISSUE

Consider and take possible action regarding compliance and enforcement activities

BACKGROUND

The City of Sanger (City) currently has 5 metered wells that have been registered with the North Texas Groundwater Conservation District (district). The meters on the City's wells are equipped with totalizers that turn over frequently enough that it makes quarterly billing difficult with district's accounting system. The district staff has contacted various City officials in the past about converting their meters and/or totalizers to bring them into compliance with the district's temporary rules.

In February, NTGCD staff sent a letter to the City informing them that we would begin billing them on a monthly basis until staff was able to get direction from the board.

OPTIONS/ALTERNATIVES

The City could leave their meters as-is, and the district could continue to send monthly bills for each of their wells. This alternative is not within the district's temporary rules and may require the district to afford these same exemptions for other water users.

The City could be issued a formal notice of major violation for not complying with the district's temporary rules. The board may also elect to give an amount of time that the City has to bring their meters into compliance prior to a notice of violation being issued.

CONSIDERATIONS

The City's meters are currently in violation of Section 8.1(c) of the District's Temporary Rules. This section states that "The totalizer must not be resettable by the registrant and must be capable of a maximum reading greater than the maximum expected annual pumpage."

STAFF RECOMMENDATIONS

The staff requests that the board provide direction on this matter.

ATTACHMENTS

Letter to City of Sanger

PREPARED AND SUBMITTED BY:

Drew Satterwhite, General Manager

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

COLLIN COUNTY - COOKE COUNTY - DENTON COUNTY

February 5, 2014

Michael Brice, City Manager
City of Sanger
PO Box 1729
Sanger, TX 76266

RE: Production Fee Billings

Dear Mr. Brice:

I have attached billings for the production fees for the City of Sanger wells for October, November and December 2013. Ordinarily the District bills on a quarterly basis. However, the wells used by the City of Sanger contain meters with registers that turn over frequently and make quarterly billing impossible to achieve. This non-compliance matter has been discussed with City of Sanger officials in the past on an informal basis. The District has been left with no other alternative than to bill monthly for the production fees due to the District.

Section 8.1(c) of the District's Temporary Rules states that "The totalizer must not be resettable by the registrant and must be capable of a maximum reading greater than the maximum expected annual pumpage." This matter will be discussed at the February 11th Board meeting, which will be held at 9:30 AM in the Krum City Hall. I expect to receive instructions from the Board regarding the City's failure to comply with the metering requirement and issuance of a formal notice of violation. You are welcome to attend the meeting to address the Board.

If you have any questions regarding this matter, please feel free to contact me.

Sincerely,

Drew Satterwhite, P.E.
General Manager

North Texas Groundwater Conservation Di
P O Box 508

Gainesville, TX 76241

(903) 786-3501 - Phone
(903) 786-8211 - Fax

33797

Account #
0000000408
Billing #
50
Service From
11/30/2013
Service To
12/31/2013
Due Date
2/28/2014

CITY OF SANGER
P O BOX 1729
SANGER TX 76266

Previous Balance	Payments	Other Credits	Current Charges	Total Amount Due	After 2/28/2014 Pay
$5,186.58			$1,234.20	$6,420.78	$6,544.20

Service/Charge	Meter ID	Location	Previous	Current	Consumption	Amount
PUBLIC	30478-0002	207 Acker St.	9406162	3314864	3908701	$390.87
PUBLIC	30478-0003	101 Cherry	6916053	9923781	3007728	$300.77
PUBLIC	30478-0004	101 Cherry	0	0	0	$10.00
PUBLIC	30478-0005	801 Willow Rd.	6488794	9611180	3122386	$312.24
PUBLIC	30478-0006	1001 Utility Rd.	5680165	7883414	2203249	$220.32

Comments

Please review Bill. If you have any questions please call Carmen Catterson or Debi Atkins at (855) 426-4433. Thank you

Current Charges	Total Due
$1,234.20	$6,420.78

North Texas Groundwater Conservation Di
P O Box 508

Gainesville, TX 76241

(903) 786-3501 - Phone
(903) 786-8211 - Fax

33797

Account #
0000000408
Billing #
49
Service From
10/31/2013
Service To
11/30/2013
Due Date
2/28/2014

CITY OF SANGER
P O BOX 1729
SANGER TX 76266

Previous Balance	Payments	Other Credits	Current Charges	Total Amount Due	After 2/28/2014 Pay
$3,112.29			$2,074.29	$5,186.58	$5,394.00

Service/Charge	Meter ID	Location	Previous	Current	Consumption	Amount
PUBLIC	30478-0002	207 Acker St.	5620742	9406162	3785420	$378.54
PUBLIC	30478-0003	101 Cherry	4051893	6916053	2864160	$286.42
PUBLIC	30478-0004	101 Cherry	0	0	0	$10.00
PUBLIC	30478-0005	801 Willow Rd.	5458433	6488794	11030360	$1,103.04
PUBLIC	30478-0006	1001 Utility Rd.	2717246	5680165	2962919	$296.29

Comments

Please review Bill. If you have any questions please call Carmen Catterson or Debi Atkins at (855) 426-4433. Thank you

Current Charges	Total Due
$2,074.29	$5,186.58

North Texas Groundwater Conservation Di
P O Box 508

Gainesville, TX 76241

(903) 786-3501 - Phone
(903) 786-8211 - Fax

33797

Account #
0000000408
Billing #
48
Service From
9/30/2013
Service To
10/31/2013
Due Date
2/28/2014

CITY OF SANGER
P O BOX 1729
SANGER TX 76266

Previous Balance	Payments	Other Credits	Current Charges	Total Amount Due	After 2/28/2014 Pay
$10,348.98	$10,348.98		$3,112.29	$3,112.29	$3,423.53

Service/Charge	Meter ID	Location	Previous	Current	Consumption	Amount
PUBLIC	30478-0002	207 Acker St.	92942520	5620742	12678221	$1,267.82
PUBLIC	30478-0003	101 Cherry	775336	4051893	3276557	$327.66
PUBLIC	30478-0004	101 Cherry	0	0	0	$10.00
PUBLIC	30478-0005	801 Willow Rd.	3992873	5458433	11465559	$1,146.56
PUBLIC	30478-0006	1001 Utility Rd.	9114752	2717246	3602493	$360.25

Comments

Please review Bill. If you have any questions please call Carmen Catterson or Debi Atkins at (855) 426-4433. Thank you

Current Charges	Total Due
$3,112.29	$3,112.29

Rule 7.6 Well Report Deposit.

The Board, by resolution, may establish a well report deposit to be held by the District as part of the well registration procedures. The District shall return the deposit to the depositor if all relevant well logs are timely submitted to the District in accordance with these Rules. In the event the District does not timely receive all relevant well logs, or if rights granted within the registration are not timely used, the deposit shall become the property of the District.

Rule 7.7 Enforcement.

After a well is determined to be in violation of these rules for failure to make payment of water use fees or groundwater transport fees on or before the 60th day following the date such fees are due pursuant to Rule 7.3, all enforcement mechanisms provided by law and these Rules shall be available to prevent unauthorized use of the well and may be initiated by the General Manager without further authorization from the Board.

Rule 7.8 Well Registration Fee

The Board, by resolution, shall establish a non-refundable well registration fee. The owner of any new well shall submit the non-refundable well registration fee payment to the District per well, which is due by the same deadline established under these rules for registration of the well. The well registration fee must be received by the District in order for the District to find a registration application administratively complete. The purpose of the well registration fee is to cover the administrative costs to the District associated with registering the well and administering the rules of the District related to the well.

Rule 7.9 Meter Sealing Fee.

The Board, by resolution, may establish a fee to recover all or part of its costs for removing and reapplying a District seal and verifying relevant well and meter information in situations where a well owner or operator submits a request to move a meter from one well to another.

SECTION 8. METERING

Rule 8.1 Water Meter Required.

(a) Except as provided in Rule 8.2, the owner of a well located in the District and not exempt under Rule 2.1 shall equip the well with a flow measurement device meeting the specifications of these Rules and shall operate the meter on the well to measure the flow rate and cumulative amount of groundwater withdrawn from the well. Except as provided in Rule 8.2, the owner of an existing well not exempt under Rule 2.1 that is located in the District shall install a meter on the well in compliance with the requirements herein prior to producing groundwater from the well after July 1, 2011.

(b) All meters must be sealed in place by the District with a District seal. Except as provided

by Rule 8.5, the meter must remain with the well except in cases where the well is modified or the meter no longer meets the accuracy standards set forth under this rule and Rule 8.4. In the event a well owner wants to move a meter from one well to another, the well owner must submit a request to the District to remove its meter seal and must pay to the District the meter sealing fee established under Rule 7.9. The District shall remove the seal within five business days of receiving a request from the well owner. The District may seal the well from which the meter was removed to prevent its operation without a meter, in addition to sealing the meter on the new well. The readings on the meter must be recorded immediately prior to removal and at the time of reinstallation.

(c) A mechanically driven, magnetic, or ultrasonic totalizing water meter must be installed on a well registered with the District unless an approval for another type of meter or measuring method is granted by the District The totalizer must not be resetable by the registrant and must be capable of a maximum reading greater than the maximum expected annual pumpage. Battery operated registers must have a minimum five-year life expectancy and must be permanently hermetically sealed. Battery operated registers must visibly display the expiration date of the battery. All meters must meet the requirements for registration accuracy set forth in the American Water Works Association standards for cold-water meters as those standards existed on the date of adoption of these Rules. Meters must be able to measure instantaneous flow rate of the groundwater produced from the well, except as follows: a meter that was installed on an existing well before April 1, 2011, that is not capable of measuring the instantaneous flow rate will not have to be replaced, provided that the meter has the ability to measure the cumulative amount of groundwater withdrawn from the well and meets all other requirements herein.

(d) The water meter must be installed according to the manufacturer's published specifications in effect at the time of the meter installation, or the meter's accuracy must be verified by the registrant in accordance with Rule 8.4. If no specifications are published, there must be a minimum length of five pipe diameters of straight pipe upstream of the water meter and one pipe diameter of straight pipe downstream of the water meter. These lengths of straight pipe must contain no check valves, tees, gate valves, back flow preventers, blow-off valves, or any other fixture other than those flanges or welds necessary to connect the straight pipe to the meter. In addition, the pipe must be completely full of water throughout the region. All installed meters must measure only groundwater.

(e) Each meter shall be installed, operated, maintained, and repaired in accordance with the manufacturer's standards, instructions, or recommendations, and shall be calibrated to ensure an accuracy reading range of 95% to 105% of actual flow.

(f) The owner of a well is responsible for the purchase, installation, operation, maintenance, and repair of the meter associated with the well.

(g) Bypasses are prohibited unless they are also metered. This subsection shall not apply to any unmetered bypasses in existence on October 19, 2010, but shall apply to bypasses installed after that date.

ATTACHMENT 13

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: March 4, 2014

SUBJECT: AGENDA ITEM NO. 13

GENERAL MANAGER'S REPORT

SUMMARY

A detailed summary of well activities for January and February are attached. All wells registered in North Texas GCD are in the Trinity and Woodbine Aquifers.

ATTACHMENTS

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E., General Manager

North Texas Groundwater Conservation District

Well Registration Summary
As of January 31, 2014

County	Exempt Wells	Non-Exempt Wells	Total Registered Wells
Collin County	61	83	**144**
Cooke County	280	339	**619**
Denton County	164	126	**290**
Total	**505**	**548**	**1053**

Monthly Summary
January 2014

County	New Exempt Well Registrations	New Non-Exempt Well Registrations	Existing Exempt Well Registrations	Existing Non-Exempt Well Registrations	Exempt Wells Completed	Non-Exempt Wells Completed	Wells Plugged
Collin County	1	1	3	0	0	0	0
Cooke County	3	0	1	0	0	0	1
Denton County	10	1	4	1	7	1	2
Total	**14**	**2**	**8**	**1**	**7**	**1**	**3**

North Texas Groundwater Conservation District

Well Registration Summary
As of February 28, 2014

County	Exempt Wells	Non-Exempt Wells	Total Registered Wells
Collin County	65	84	**149**
Cooke County	292	340	**632**
Denton County	181	116	**297**
Total	**538**	**540**	**1078**

Monthly Summary
February 2014

County	New Exempt Well Registrations	New Non-Exempt Well Registrations	Existing Exempt Well Registrations	Existing Non-Exempt Well Registrations	Exempt Wells Completed	Non-Exempt Wells Completed	Wells Plugged
Collin County	0	0	5	0	0	0	0
Cooke County	1	0	1	0	3	0	0
Denton County	11	0	19	0	14	2	2
Total	**12**	**0**	**25**	**0**	**17**	**2**	**2**

ADJOURN